WHAT IS CLAIMED IS

1. Process for measuring the characteristics of a surface coating (1) on metallurgical products, in particular in-line during the feed of the said product during manufacture, wherein, in order to expose a zone (13) of the surface of the said product to incident radiation (23) directed orthogonally to the said surface and to then measure, also in a direction orthogonal to the surface, the radiation energy reflected by the exposed zone (13), the said zone (13) is illuminated by a lighting optical fibre (2) connected to an incident radiation emission source (24) with a predetermined wavelength and the reflected radiation is measured by means of a measuring optical fibre (3) connected to a sensor (34), the free ends (21, 31) of the two optical fibres (2, 3) being stripped and held in the immediate vicinity of each other and parallel to each other.

2. The process according to claim 1, wherein the stripped free ends (21, 31) of the optical fibres (2, 3) are held at a distance from the surface (1) of the product of between 5 and 50 mm.

3. The process according to claim 1, wherein the radiation used is located in the near infrared range more especially with a wavelength of 830 nm.

4. The process according to claim 1, wherein the reflected radiation is also measured in one or more directions oblique to the surface (1) of the product to evaluate the energy diffused by the said illuminated zone (13).

5. The process according to claim 4, wherein the measurement angle (or angles) is (are) between 0 and 30°

from the vertical of the said surface (1).

6. Device for measuring the characteristics of a metallurgical product surface coating, in particular in-line, during the feed of the said product during manufacture, wherein it includes a measuring head (51) with a front surface (55) intended to be placed opposite the surface (1) of the product and including a lighting optical fibre (2) and a measuring optical fibre (3), these two optical fibres each having, at the front face (55) of the head (51), a free stripped end (21, 31) so that the corresponding terminal portions of the said fibres are arranged parallel and as close to each other as possible, the other end of the lighting optical fibre (2) being also connected to a light radiation source (24) and the other end of the measuring optical fibre (3) being connected to a sensor (34), the device including in addition means (57) for processing the signal supplied by the said sensor (34) for determining the intensity of the radiation which is transmitted to it by the measuring optical fibre (3).

7. The device according to claim 6, wherein it includes a distance sensor (52) to permanently check or measure the distance between the free stripped ends (21, 31) of the optical fibres and the surface (1) of the product.

8. The device according to claim 6, wherein the measuring head (51) includes an additional optical fibre (4) connected to a specific sensor (44) the free end part (41) of which is oriented obliquely in relation to the free end portion (21) of the lighting optical fibre (2).

9. The device according to claim 6, wherein the radiation source (24) is a laser diode the emission wavelength of which is around 830 nm.

10. Application of the process according to claim 1 to a moving steel strip.